As to the angiosperms, polyphylesis is explicitly advocated. The characteristic structure of this group is not seed, nor flower, nor pollen tube, nor trachea; it is the embryo-sac. If the hypothesis of multiple origins means that this structure has been evolved several times independently, it is hard to accept. Even more than the stoma, it requires good evidence of repeated evolution before it is questioned as proof of real affinity.

There are 351 numbered figures, most of which are composed of a considerable number of drawings, largely original and well reproduced. They add materially to the value of the book. The text is a remarkable mine of detailed information. How much there is of this may be shown by the index, which occupies 37 pages of fine print, two columns to the page, and is still incomplete; thus, under "stoma" there is no reference to the text, and under "embryo-sac" there is only one.—E. B. Copeland, Department of Botany, University of California, Berkeley.

Sinopsis de la Flora del Cuzco. Fortunato L. Herrera. Tomo I. Parte Sistematica. Pag. 1–528. Publicado bajo los auspicios del supremo gobierno. Lima, Peru, 4 de Julio, 1941.

This check list of the plants of the Department of Cuzco by the distinguished Peruvian botanist is by far the most complete of several similar works by the same author, the first of which appeared in 1919. It lists 2166 species (with a few varieties) 588 of which are cryptogams, about 250 of these being ferns and fern allies. Even so, the author suggests that probably only about one-half of the species growing within the area have been recorded. The predominant families are Compositae, Gramineae, and Leguminosae.

The names are accompanied, at least for the phaenerogams, by source of publication and citation of specimens. The latter are given in detail, usually including altitude, information which will be invaluable in any study of the flora; habitats, however, are rarely indicated. Often the range of the plant outside of Cuzco, if known, is mentioned; there are some economic notes. An appendix contains descriptions of new species based on the author's collections. There is also a list of native names and their scientific equivalents, and an index to the genera.

In a work of this nature, based of necessity on the literature available—of which there is a good bibliography—there are of course always omissions; on the other hand there are a few additions to the flora of Cuzco. In supplements, which it is to be hoped will be issued from time to time, it would be well to give the source of determination and to indicate where the collections may be consulted in order that identifications may be checked when desired. The work would be more consistently useful, too, if publication citations were always given (which is obviously the intent but they are not infrequently omitted). Most of the typographical errors will easily be corrected; only one mistake in the

presentation of the material has been noted, namely the including of the composite *Orthopappus,* on page 321, in the Melastomataceae.

The author in preparing the work and the Peruvian Government in publishing it have made a meritorious contribution to the scientific study of the rich and useful flora of Cuzco; may there be many more similar endeavors based increasingly on the activities of Peruvian students.—J. F. Macbride, Field Museum of Natural History.

A Flora of Arizona and New Mexico. By Ivar Tidestrom and Sister Teresita Kittell. Pp. xxvi + 897 with frontispiece. The Catholic University of America Press, Washington, D. C., 1941. $5.00.

The flora of Arizona and New Mexico, listing 898 genera and 3975 species, is arranged according to the systems of DeCandolle and Bentham and Hooker with some slight emendations, chief of which is the arrangement of the orders and families in a descending numerical sequence as to the number of cotyledons. Hence the Coniferae with many cotyledons come first and the ferns and fern allies with none appear at the close of the work. The keys are brief and to the point and brief descriptions aid materially in amplifying the keys. There is a general citation of habitat and range accompanying each entity. The work is ambitious and as such is worthy but one cannot read it without a feeling of regret. Much of the advance in botany of the past fifteen years is ignored. Many monographs which have appeared during this time are not alluded to either as to the species accepted or in the synonymy.

The frontispiece is a map of Arizona and New Mexico showing the major rivers and the two thousand foot contour intervals. There are fifteen circles indicating localities but no evident reference to these in the text. On the other hand the table of contents refers to the map as showing the "belts of vegetation." The reason for this confusion is not clear to the reviewer.

The volume is lithoprinted and would have been materially improved by either a little more space between the species or by underlining the species names. As it stands the pages appear crowded and the typography does not invite the reader's attention. In many instances the craftsmanship of both typist and printer is definitely at fault.—Herbert L. Mason.

NOTES AND NEWS

On May 24, 1941, the University of California conferred the honorary degree of doctor of laws on Dr. Willis Linn Jepson, Professor of Botany Emeritus of that institution. The honor is in recognition of Dr. Jepson's contribution to our knowledge of the California flora and his long and successful promotion of forest conservation in the state.